

Code changes are in red. Changes are to tracerid\_mod.f, jv\_spec.dat, globchem.dat, input.geos, ratj.d files.  
Line numbers refer to lines in attached files.

---

## tracerid\_mod.f

Added declaration of **IDMPN** in ID's for SMVGEAR species (line 207).

Added declaration of **IDTMPN** in GEOS-CHEM tracer ID's (line 232).

Added:

```
CASE ( 'MPN' )  
    IDTMPN = N
```

in the do loop for assign tracer, biomass, biofuel, and anthro emission ID's (lines 489-490).

Added:

```
IF ( NAMEGAS(I) == 'MPN' ) IDMPN = I
```

in do loop after settrace begins here (line 1047).

Added:

```
IDMPN = 0
```

to SMVGEAR species ID #'s (line 1504).

Added:

```
IDTMPN = 0
```

to GEOS-CHEM Tracer ID #'s (line 1601).

---

## jv\_spec.dat

Increased NJVAL to **30** (line 2).

Added:

```
MPN 297 2.601E-20 1.103E-20 5.239E-21 2.793E-21 2.250E-22 0.000E+00 0.000E+00  
MPN 298 2.601E-20 1.103E-20 5.239E-21 2.793E-21 2.250E-22 0.000E+00 0.000E+00
```

in cross section part (lines 70-71).

---

## globchem.dat

Added:

```
A MPN      1.00 1.000E-20 1.000E-20 1.000E-20 1.000E-20  
      0 0 0 0 0 0 0 0 0 0
```

to species list (lines 288-289).

Added:

```
A 815 1.00E-30 4.8E+00 0 1 P 0.60 0. 0.  
      7.20E-12 2.1E+00 0 0 0.00 0. 0.  
      MO2      + NO2      M  
=1.000MPN      +1.000M      +      +  
+      +      +      +  
+      +      +      +  
+      +      +      +  
A 816 1.05E-02 4.8E+00 -11234 1 P 0.60 0. 0.  
      7.58E+16 2.1E+00 -11234 0 0.00 0. 0.
```

MPN	+	M	
=1.000MO2		+1.000NO2	+
+	+	+	+
+	+	+	+
+	+	+	+

to kinetic reactions (lines 1708-1721).

Added:

A 817 3.01E+01 0.0 0 0 0.00 0. 0.

MPN	+		
=1.000CH2O		+1.000NO3	+1.000HO2
+	+	+	+
+	+	+	+
+	+	+	+

A 818 3.02E+01 0.0 0 0 0.00 0. 0.

MPN	+		
=1.000MO2		+1.000NO2	+
+	+	+	+
+	+	+	+
+	+	+	+

to photolysis reactions (lines 2234-2245).

---

## input.geos

Changed number of tracers to 44 in tracer menu (line 24).

Added:

Tracer #44 : 44 MPN 93.0

to tracer menu tracer entries(line 69).

In prod and loss menu changed 1<sup>st</sup> and 2<sup>nd</sup> chemical families to:

1st chemical family : POX: O3 NO2 2NO3 PAN PMN PPN HNO4 3N2O5 HNO3 MPN

2nd chemical family : LOX: O3 NO2 2NO3 PAN PMN PPN HNO4 3N2O5 HNO3 MPN

lines (287-288).

---

## ratj.d

Added:

56 MPN	PHOTON	HO2	NO3	HCHO	0.00E+00	0.00	5.0 MPN
57 MPN	PHOTON	MO2	NO2		0.00E+00	0.00	95.0 MPN

to photolysis reactions (lines 72-73).